

AMENDMENT TO THE DRAWINGS

Please replace sheet one of the drawings with the enclosed replacement sheet.

REMARKS

This Amendment is in response to the Office Action dated April 20, 2005, which was made final. Applicants respectfully request reconsideration and allowance of all pending claims in view of the above-amendments and the following remarks.

I. OBJECTIONS TO THE DRAWINGS

With respect to FIG. 1, the Office Action requested that the exploded elements of FIG. 1 be enclosed with a bracket "on both sides" of the figure rather than a single bracket. Accordingly, enclosed is a replacement sheet with brackets on both sides of the figures, as requested.

With respect to drawing sheets 1-3, the Office Action requested that the identifying indicia in drawing sheets 1-3 should be deleted from the front side of the sheet placed on the back side. Applicants wish to re-iterate that the present drawings comply with the current Code of Federal Regulations (C.F.R.), and the Examiner's position is directly opposite to the Regulation requirements. It appears that the Examiner may be looking at an old version of the rule. Rule 37 C.F.R. §1.84(c) explicitly states,

"If this information is provided, it must be placed on the front sheet and centered within the top margin." (Emphasis added)

Since the location of the identifying indicia is not optional, Applicants have no choice but to place such indicia on the front of each sheet (as opposed to the back).

Applicants believe the present Amendment is completely responsive to the stated objection. If for some reason this Amendment should fail to overcome the objection, Applicants' attorney invites the Examiner to a telephone interview to discuss how the objection can be overcome.

Otherwise, Applicants respectfully request that

the rejection to the drawings now be withdrawn.

II. CLAIM REJECTIONS UNDER §102

Claims 1-32 were rejected by §102(e) as being anticipated by Hosomi, U.S. Publication No. 2003/0209807 (now U.S. Patent No. 6,768,206).

The Office Action appears to repeat the rejections recited in the previous Office Action. The Hosomi patent does disclose a substrate for a flip chip bonding. However, this is where the similarity with the present application ends.

As described in Applicants' previous response, the figures and paragraphs of Hosomi that are cited in the Office Action do not support the rejection. Little or no similarity can be found, and entire elements are completely missing.

Claim 1 recites the structural routing of first and second contacts of a differential signal pair to respective third and fourth contacts through a flip chip substrate. The first and second contacts are arranged on the top layer of the substrate within a die bonding area, and the third and fourth contacts are arranged on the bottom layer of the substrate.

The Hosomi patent does not mention differential signal pairs. Hosomi therefore does not teach how such pairs should be routed relative to one another through a flip chip substrate. Contrary to the statement in the Office Action, Hosomi para. [0002] lines 3-7 and #16 do not refer to differential signal pairs. Besides, bumps 16 are on the die, not the substrate. Hosomi discloses metallic pads 20 on the substrate, but not a routing pattern for pads corresponding to a differential signal pair.

Regarding Hosomi para. [0006], lines 1-4, simply states that, "Traces (not shown) electrically interconnect pads 20 or 28 on either top surface 24 or bottom surface 30 of the substrate 14 or to vias (not shown) . . ." Again, Hosomi provides no guidance

as to how traces for a differential signal pair can or should be routed relative to one another through the substrate.

Regarding Hosomi Figure 8 and para. [0015], Hosomi does not disclose "the second trace [of a differential signal pair] is routed out of the die bonding area on a different one of the layers than the first trace [of the differential signal pair]," or that the second trace (of such a pair) comprises "a via in the die bonding area extending from the top layer to another of the plurality of layers," as recited in claim 1 of the present application.

With respect to Figure 8, this figure simply shows a signal trace 110 routed between two vias 70. (See para. [0015], lines 1-3). Figure 8 of Hosomi shows none of the elements mentioned above and is completely unrelated to the invention recited in claim 1. Hosomi does not suggest that trace 110 is electrically connected to either one of the vias 70 or that the vias 70 are related to one another.

The figure and the corresponding paragraph certainly do not disclose a second trace of a differential signal pair being routed out of a die bonding area on a different one of the layers than a first trace of the signal pair.

Regarding Hosomi Figures 8-10 and paragraphs [0031] and [0032], Hosomi does not disclose a via in a second trace (of a differential signal pair) in the die bonding area and extending from the top layer to another of the plurality of layers, wherein the via is laterally offset from the second contact in a direction toward the first contact.

Hosomi discloses no such offset and particularly no offset with respect to differential signal pairs and their corresponding contacts. Figures 8-10 were discussed in detail in Applicants' previous response, and this discussion clearly shows that Figures 8-10 are unrelated to the structure recited in claim

1 of the present application.

A similar analysis can be made for independent claims 13 and 22 and their respective dependent claims.

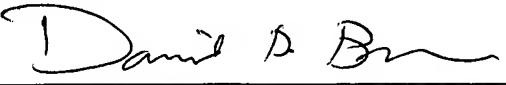
While the Office Action has made general references to particular figures or paragraphs in Hosomi, the Office Action has failed to show or explain which contact or trace in Hosomi corresponds to which element of Applicants' claims and how such contact or trace meets the claim limitations in relationship to the other elements of the claims. Applicants respectfully suggest that such an exercise has not and cannot be done since Hosomi simply does not disclose the relationships recited in the rejected claims.

Since numerous elements appearing in independent claims 1, 13 and 22 are completely absent from Hosomi, Applicants respectfully request that the rejection of claims 1-32 under §102(e) based on Hosomi be withdrawn.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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